UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
2002/00582

July 15, 2002

Lawrence C. Evans
U.S. Army Corps of Engineers
Operations Division
Regulatory Branch
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for the Anunde Island Habitat Restoration Project, Columbia County, Oregon (Corps No. 2002-00009).

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the Lower Columbia River Watershed Council's proposal to remove an artificial land bridge near the town of Clatskanie, in Columbia County, Oregon. Because the work will require a Rivers and Harbors Act Section 10 permit, the Corps of Engineers (COE) is the lead Federal agency. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR fall chinook salmon (*O. tshawytscha*), SR spring/summer chinook salmon, Upper Columbia River (UCR) spring-run chinook salmon, Lower Columbia River (LCR) chinook salmon, Upper Willamette River (UWR) chinook salmon, Columbia River chum salmon (*O. keta*), SR basin steelhead, UCR steelhead, UWR steelhead, Middle Columbia River steelhead, and LCR steelhead (*O. mykiss*), or destroy or adversely modify designated critical habitat.

The attached Opinion contains an analysis of the effects of the proposed action on designated critical habitat for SR fall chinook salmon, SR spring/summer chinook salmon, and SR sockeye salmon. In May, 2002, a Federal court vacated the rule designating critical habitat for the other evolutionarily significant units (ESUs) considered in this Opinion. If critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation for the other ESUs will be necessary at that time.

As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Pat Oman of my staff in the Oregon Habitat Branch at 503.231.2313.

Sincerely,

F.r Michael R Course

D. Robert Lohn
Regional Administrator

cc: Tom Shafer, OWEB
Kemper M. McMaster, USFWS

Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Anunde Island Habitat Restoration,
Columbia River,
Columbia County, Oregon
(Corps No. 2002-00009)

Agency:	Army Corps of Engineers, Portland District
Consultation Conducted By:	NOAA Fisheries, Northwest Region
Date Issued:	July 15, 2002
Issued by:	F.r Michael R Crouse D. Robert Lohn Regional Administrator
Refer to:	**2002/00582**

TABLE OF CONTENTS

1. ENDANGERED SPECIES ACT

1.1 Background

On March 12, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a letter from the Corps of Engineers (COE) requesting informal consultation on the issuance of a permit to remove an artificial land bridge located near the confluence of the Clatskanie River and the Columbia River. In the March 12, 2002, letter, the COE determined that chinook salmon, chum salmon, sockeye salmon, and steelhead may occur within the project area, and that the proposed project is "not likely to adversely affect" (NLAA) the subject listed species or their designated critical habitat. Additional information was sought and provided by the COE in fax transmissions on May 22, 2002, and an e-mail communication dated May 29, 2002. Because of the potential for turbidity from removal of the land bridge, the determination of effect was changed to "likely to adversely affect" (LAA). The species that use the project area include Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR spring/summer chinook salmon (*O. tshawytscha*), SR fall chinook salmon (*O. tshawytscha*), Lower Columbia River (LCR) steelhead (*O. mykiss*), Upper Willamette River (UWR) steelhead (*O. mykiss*), Upper Columbia River (UCR) steelhead (*O. mykiss*), SR basin steelhead (*O. mykiss*), Middle Columbia River steelhead (*O. mykiss*), Columbia River chum salmon (*O. keta*), LCR chinook salmon (*O. tshawytscha*), UCR spring chinook salmon (*O. tshawytscha*), and UWR chinook salmon (*O. tshawytscha*). Based on information received from the COE, NOAA Fisheries prepared this biological opinion (Opinion).

NOAA Fisheries has prepared this Opinion to address impacts to these species as a result of the proposed project. The objective of this Opinion is to determine whether the proposed action is likely to jeopardize the continued existence of the above listed species, or destroy or adversely modify critical habitat.

This Opinion contains an analysis of the effects of the proposed action on designated critical habitat for SR fall chinook salmon, SR spring/summer chinook salmon, and SR sockeye salmon. In May, 2002, a federal court vacated the rule designating critical habitat for the other evolutionarily significant units (ESUs) considered in this Opinion. If critical habitat is redesignated before this action is fully implemented, the analysis will be relevant when determining whether a reinitiation of consultation for the other ESUs will be necessary at that time.

1.2 Proposed Action

The proposed action is described briefly below, highlighting the major activities in the proposed project. Detailed descriptions of in-water work, sampling, analysis, and quality assurance plans can be found in the biological assessment (BA) prepared for the watershed council by Natural Resource Solutions (Haak, December 2001), and in the administrative record for this project, which includes updated project design and the results of contaminant sampling.

Anunde Island is within an area that, prior to the construction of sloughs and levees, was part of a broad section of Columbia River floodplain. At present, Anunde Island is separated from an unnamed island to the southeast by a meander of the Clatskanie River. The proposed action involves removing an artificial land bridge that was constructed in the 1930s to connect this unnamed island with a section of the historic floodplain. The land bridge is approximately 110 feet long, 14 feet wide, and 9 feet high. This unnamed island is also surrounded by a meander of the Clatskanie River, and before the land bridge was built, the Kinnunen Cut (an artificial ditch) connected to the mainstem of the Clatskanie River about one mile south of Wallace Slough (the Columbia River). Now, however, the land bridge is blocking water from exiting the Kinnunen Cut on the southern (upstream) end, and the ditch is filling because of the deposition of sediment during high water. The area is tidally influenced, so water from Clatskanie River and the Columbia River back up into the Kinnunen Cut. The project is located on the left bank (looking downstream) of the Clatskanie River in Columbia County, Oregon.

The land bridge will be breached using heavy equipment (tracked excavator), and the spoils deposited on the landward side of the levee, next to the land bridge. Approximately 500 cubic yards (cu yd) of material will be removed and placed on the edge of a hybrid poplar farm, where it will be worked flat to blend into the contour of the levee. To stabilize the margins of the cut area, no more than 100 cu yd of light, loose riprap will be placed below the ordinary high water line, at the base of the exposed area. At present, along the edge of the land bridge there is an understory of reed canarygrass and Himalayan blackberry, and an overstory of small trees. This riparian vegetation will be removed, and about 1,600 square feet of area will be exposed along 150 feet of shoreline. The area will be revegetated with native plant species, primarily willow, after the land bridge is removed. The work is expected to take no more than a week, and will be carried out in July or August, which is within the preferred Oregon Department of Fish and Wildlife (ODFW) in-water work period (ODFW 2000).

1.3 Biological Information and Critical Habitat

The action area is defined by NOAA Fisheries regulations (50 CFR 402) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area for the proposed projects extends downstream from the site of the land bridge and the adjacent levee for the length of the Clatskanie River and the length of the Kinnunen Cut, to the confluence of the Clatskanie with Wallace Slough (the Columbia River).

The Columbia River serves as a migration area for all ESA-listed species under consideration in this Opinion. It may also serve as a feeding and rearing area for juvenile chum and sub-yearling chinook salmon. Essential features of the area for the species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (50 CFR 226). The proposed action may affect the essential habitat features of water quality, substrate, food, riparian vegetation, space, and safe passage conditions.

References for further background on listing status, biological information and critical habitat elements can be found in Table 1.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is
likely to jeopardize the listed species, and/or whether the action is likely to destroy, or adversely modify designated critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

Furthermore, NOAA Fisheries evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NOAA Fisheries must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of critical habitat. If NOAA Fisheries concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent measures available.

For the proposed action, a jeopardy analysis by NOAA Fisheries considers direct or indirect mortality of fish attributable to the action. A critical habitat analysis by NOAA Fisheries considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species, taking into account population size, trends, distribution and genetic diversity. To assess to the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for the listed species to survive and recover to a naturally-reproducing population level at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

Table 1. References for Additional Background on Listing Status, Biological Information, and Critical Habitat Elements for the Listed and Proposed Species Addressed in this Opinion.

Species	Listing Status	Critical Habitat	Protective Regulations	Biological Information, Historical Population Trends
Upper Willamette River chinook salmon	March 24, 1999; 64 FR 14308, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Willamette River steelhead	March 25, 1999; 64 FR 14517, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
Columbia River chum salmon	March 25, 1999; 64 FR 14508, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Johnson *et al.* 1997; Salo 1991
Lower Columbia River steelhead	March 19, 1998; 63 FR 13347, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
Middle Columbia River steelhead	March 25, 1999; 64 FR 14517, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Columbia River steelhead	August 18, 1997; 62 FR 43937, Endangered	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
Snake River Basin steelhead	August 18, 1997; 62 FR 43937, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Busby *et al.* 1995; 1996
Snake River sockeye salmon	November 20, 1991; 56 FR 58619, Endangered	December 28, 1993; 58 FR 68543	November 20, 1991; 56 FR 58619	Waples *et al.* 1991a; Burgner 1991
Lower Columbia River chinook salmon	March 24, 1999; 64 FR 14308, Threatened	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Myers *et al.*1998; Healey 1991
Upper Columbia River spring-run chinook salmon	March 24, 1999; 64 FR 14308, Endangered	Remanded May 7, 2002	July 10, 2000; 65 FR 42422	Myers *et al.*1998; Healey 1991
Snake River spring/summer-run chinook salmon	April 22, 1992; 57 FR 14653, Threatened	December 28, 1993; 58 FR 68543	April 22, 1992; 57 FR 14653	Matthews and Waples 1991; Healey 1991
Snake River fall chinook salmon	April 22, 1992; 57 FR 14653, Threatened	December 28, 1993; 58 FR 68543	April 22, 1992; 57 FR 14653	Waples *et al.* 1991b; Healey 1991

1.4.2 Environmental Baseline

The most recent evaluation of the environmental baseline for the Lower Columbia River is part of NOAA Fisheries' Opinion for the Federal Navigation Channel Improvements, issued on May 20, 2002. This opinion assessed the Lower Columbia River system, including the estuary and river mouth, up to the terminus of the action area in Portland, Oregon, and includes discussions about the effects of dredging on listed anadromous salmonids. A detailed evaluation of the environmental baseline of the Lower Columbia River, estuary, and mouth can be found in the Channel Improvements Opinion, which is posted on the NOAA Fisheries Northwest Region website at: http://www.nwr.noaa.gov/1publcat/allbiops.htm.

The quality and quantity of freshwater habitats in much of the Columbia River Basin have declined dramatically in the last 150 years. Forestry, farming, grazing, road construction, hydrosystem development, mining, and urbanization have radically changed the historical habitat conditions of the basin. Depending on the species, anadromous salmon spend from a few days to one or two years in the Columbia River and its estuary before migrating out to the ocean, and another one to four years in the ocean before returning as adults to spawn in their natal streams.

Water quality in streams throughout the Columbia River Basin has been degraded by human activities such as dams and diversion structures, water withdrawals, farming and grazing, road construction, timber harvest activities, mining activities, and urbanization. Tributary water quality problems contribute to poor water quality where sediment and contaminants from the tributaries settle in mainstem reaches and the estuary. Temperature alterations also affect salmonid metabolism, growth rate, and disease resistance, as well as the timing of adult migrations, fry emergence, and smoltification. Many factors can cause high stream temperatures, but they are primarily related to land-use practices rather than point-source discharges. Loss of wetlands and increases in groundwater withdrawals have contributed to lower base-stream flows, which in turn contribute to temperature increases. Channel widening and land uses that create shallower streams also cause temperature increases.

Pollutants also degrade water quality. Salmon require clean gravel for successful spawning, egg incubation, and emergence of fry. Fine sediments clog the spaces between gravel and restrict the flow of oxygen-rich water to the incubating eggs. Excess nutrients, low levels of dissolved oxygen, heavy metals, and changes in pH also directly affect the water quality for salmon and steelhead.

Water quantity problems are also a significant cause of habitat degradation and reduced fish production. Withdrawing water for irrigation, urban, and other uses can increase temperatures, smolt travel time, and sedimentation. Return water from irrigated fields can introduce nutrients and pesticides into streams and rivers. On a larger landscape scale, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, flood plains, and wetlands that once stored water during periods of high runoff have been developed. Urbanization paves over or compacts soil and increases the amount and pattern of runoff reaching rivers and streams.

The Clatskanie River watershed drains approximately 53 square miles, and about 75 percent of the area is in commercial forest use. The entire river is designated by the Oregon Department of Environmental Quality (ODEQ) as water quality limited due to unhealthy levels of dissolved oxygen and bacteria (ODEQ 1998). A recent assessment of the lower stretch of the river found that summer temperatures regularly exceeded the state standard as well (Rule, 2001). Seasonal monitoring of turbidity levels done by ODEQ over a 10-year period found a range of levels, from two to 10 Nephelometric Turbidity Units (NTU). Because of low velocity and low gradient, the substrate contains fine sediments that have accumulated as a result of extensive erosion within the watershed. Some of the material that has settled out may contain chemical pollutants from urban, industrial, and agricultural practices. No extensive analysis of the substrate has been done, but samples taken in spring, 2002 and analyzed by Columbia Analytical Services found normal levels of organochlorine pesticides (fax from Susan Sturges, COE to Pat Oman, May 22, 2002).

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area.

For the proposed actions, all conditions in the project area will be maintained, with the exception of physical barriers, which will be improved.

Impacts of the proposed project to stream habitat and fish populations can be separated into direct and indirect affects. Direct effects are those that contribute to the immediate loss or harm to individual fish or embryos (*e.g.*, heavy equipment directly crushing a fish, crushing or destabilizing a redd that results in the actual destruction of embryos, or dislodging the embryos from the protective nest and ultimately destroying the eggs). Indirect effects are those impacts which occur at a later time, causing specific habitat features (*e.g.* undercut banks, sedimentation of spawning beds, or loss of pools), localized reductions in habitat quality (*e.g.* sedimentation, loss of riparian vegetation, or changes in channel stability and structure), and which ultimately cause loss or reduction of populations of fish, or reductions in habitat quantity and/or quality.

1.5.2 Effects on Critical Habitat

The removal of existing riparian vegetation on the margins of the land bridge will cause temporary effects that include elevated summer temperatures and the loss of allochthonous input. This will be partially offset in the short term by improved water circulation. The previously stagnant water in the Kinnunen Cut will have some minimal flow, which should help ameliorate warming. Over the long term, the replacement riparian vegetation will mature and provide shade to cool the water.

The sediments within the Kinnunen Cut area may contain organophosphate and/or organochloridecontaminants. While the benefits of the proposed action generally outweigh the potential harm from stirring up pollutants and sending them out into the water column, this activity will result in the possibility of take of ESA-listed anadromous salmonids. Exposure of salmon to organophosphates and organochlorides can cause continuing sub-lethal effects, including immunosuppression, increased susceptibility to disease, and prey contamination.

Brief exposure of salmon to contaminants may contribute to immune altering events and a consequent increase in disease susceptibility (Arkoosh *et al.* 1998). Over time, immunosuppression from contaminant exposure may lead to an increase in disease and mortality (Arkoosh *et al.* 1998). Immunosuppressed fish may allocate greater energy and resources to defending themselves against disease, therefore reducing energy available for vital functions such as growth and reproduction (Arkoosh *et al.* 1998). At very low levels, contaminants may have no effect on growth, but bone development may still be affected (Mauck *et al.* 1978).

Because the primary use of this area by anadromous fish will be as an adult migration corridor, it is unlikely that these effects will be of sufficient severity to cause any significant harm. Juvenile fish rearing in the off-channel habitat would be at greater risk if contaminants were to remain suspended for any length of time. However, the turbidity that will result from the project activity will be of brief duration, and the project timing will ensure that very few juvenile anadromous fish will be present.

During high water events, it is possible that the improved flow in the Kincanon Cut will wash out accumulated sediments and deposit them downstream, in the Clatskanie River and Columbia River. Rule (2001) found that the ODEQ turbidity analyses were typically not done within two days of greater than 0.5-inch rain events, so it is difficult to assess the amount of turbidity that could be expected, and how long disturbed sediments would remain suspended. Without a more complete analysis of the sediment in the Kinnunen Cut, it is also difficult to determine whether possible organophosphate or organochlorine contaminants will have an effect on salmonids that will be migrating during the fall, winter, and spring. Because the practice in evaluating risk in the absence of data is to be conservative, these are identified as potential sources of harm to fish.

The sloughs and backwaters around Anunde Island currently provide some scarce off-channel habitat for anadromous fish, and the project is expected to improve access to the habitat in the Kinnunen Cut for juvenile salmonids. Improved circulation and flow will cool the water in the vicinity of the project, and allow adult migration through the area during high water. The removal of non-native vegetation, and replanting native plant species will restore riparian conditions to a more natural condition, and prevent the spread of invasive exotic species such as Himalayan blackberry to other parts of the island.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area

of the Federal action subject to consultation." Future federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years**.**

1.6 Conclusion

NOAA Fisheries has determined, based on the available information, that the proposed action covered in this Opinion is not likely to jeopardize the continued existence of listed salmonids or adversely modify critical habitat. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis, analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action would cause a minor, short-term degradation of anadromous salmonid habitat due to the loss of riparian habitat and the turbidity caused by project construction. There is no evidence of contaminants in the sediment, but the re-suspension of organochlorine pesticides (primarily DDT), if any are present, could have long-term deleterious effects on fish and their predators. Direct mortality is not expected. The completed project will open up rearing and resting habitat for juvenile salmonids and improve water quality and water flow in the vicinity of the Kinnunen Cut. Thus, the proposed project is not expected to impair currently properly functioning habitats, appreciably reduce the functioning of already functioning habitats, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery of listed species at the population or ESU scale.

1.7 Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are *discretionary* measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NOAA Fisheries believes the following conservation recommendation is consistent with these obligations, and therefore should be carried out by the COE.

The COE, in cooperation with the Lower Columbia River Watershed Council, should develop a monitoring and assessment plan for the Lower Clatskanie River to include sediment sampling and turbidity measurements. The sediment samples would be taken from the Kinnunen Cut prior to construction, and the turbidity levels should be monitored after greater than 0.5-inch rainfall events at the southern outlet end (the newly opened area) of the Kinnunen Cut. This turbidity can be observed at intervals during fall, when migration of adult salmonids will be taking place. Ideally, post-construction water quality sampling for the presence of organophosphates and organochlorines

would also be done to determine whether the improved flow out of the Kinnunen Cut is redepositing contaminants downstream. This set of measures would be necessary only if the initial sampling reveals pollutants in the accumulated sediments within the Kinnunen Cut.

1.8 Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded; (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the biological assessment and this biological opinion; (3) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in complicance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of ESA-listed salmonids because of detrimental effects from increased turbidity levels and in-water work. Effects of actions such as the one covered by this Opinion are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on habitat or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of

incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable."

Based on the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to the action area.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered by this Opinion. The COE shall include measures that will:

1. Minimize the likelihood of incidental take from in-water work by applying permit conditions to avoid or minimize disturbance to riparian and aquatic systems.
2. Complete a monitoring and reporting program to ensure measures provided in this Opinion are effective in minimizing the likelihood of take from permitted activities.

2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the COE and/or their contractors must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1 (avoid or minimize disturbance to riparian and aquatic systems), the COE shall ensure that:
    a. In-water work. All work within the active channel of all anadromous fish-bearing streams, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within the ODFW approved in-water work period of July 15 to September 15.
    b. Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark, must be approved by biologists from NOAA Fisheries.
    c. Pollution control plan. A Pollution Control Plan (PCP) will be developed to prevent point-source pollution related to construction operations. The PCP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:
        i. Methods that will be used to prevent erosion and sedimentation associated with the breaching action.
        ii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.

iii. Measures that will be taken to prevent fill from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

d. Waste management. Any contaminated waste generated will be disposed of off site at the appropriate facility.

e. Minimization of riprap. Rock for stabilizing the streambank must be class 350 metric or larger, wherever feasible, and will not constrict the channel or impair natural stream flows into or out of secondary channels or riparian wetlands.

f. Use of heavy equipment. Vehicles must be fueled, operated, maintained, and stored as follows:

i. Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in an area 150-ft or more from any water body, if feasible.

ii. All vehicles operated within 150-ft of any water body or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation.

iii. All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

2. To implement reasonable and prudent measure #2 (monitoring and reporting), the COE shall ensure that:

a. Monitoring. Within 120 days of completing the project, the COE will submit a monitoring report to NOAA Fisheries describing the COE's success meeting these terms and conditions. This report will consist of the following information.

i. Project identification.

(1) Project name;

(2) starting and ending dates of work completed for this project; and

(3) the name and address of the supervisor(s).

ii. A narrative assessment of the project's effects on natural stream function.

iii. Photographic documentation of environmental conditions at the project site before, during, and after project completion.

(1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.

(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.

(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

iv. All proposed monitoring reports and any resulting memorandums of this removal action will be submitted to NOAA Fisheries.

b. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the NOAA Fisheries Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; telephone: 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

c. Monitoring reports will be submitted to:

NOAA Fisheries
Oregon Habitat Branch
Attn: OSB2002-0001-FEC
525 NE Oregon Street
Portland, OR 97232

3. MAGNUSON-STEVENS ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of EFH, “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include aquatic areas historically used by fish where appropriate. “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities. “Necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem, and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for Federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon, and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to The Pacific Coast Groundfish Management Plan (PFMC 1998a) and the NOAA Fisheries Essential Fish Habitat for West Coast Groundfish Appendix (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the Coastal Pelagic Species Fishery Management Plan (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999).

Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed action is detailed above in section 1.2. This area has been designated as EFH for various life stages of chinook and coho salmon and starry flounder.

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in detrimental short-term adverse effects to certain habitat parameters. Removal of the land bridge could result in a temporary increase in turbidity.

3.6 Conclusion

NOAA Fisheries believes that the proposed action may adversely affect the EFH for chinook and coho salmon and starry flounder.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the COE and all of the Reasonable and Prudent Measures and the Terms and Conditions contained in sections 2.2 and 2.3 are applicable to EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The COE must reinitiate EFH consultation with NOAA Fisheries if the action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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